

BETEC[®] Seal

Rigid waterproofing coating

Product Description

BETEC[®] Seal is a rigid, cement based coating for waterproofing of concrete and masonry.

Advantages

- High adhesion and waterproofing performance for long-term waterproofing against positive and negative hydrostatic pressures.
- Fast setting properties for minimal downtime and rapid completion of the application.
- Fast, easy and cost effective application by manual application or spraying.
- CE certified according EN 1504-2.

Certification

- CE certified according to EN 1504-2, principle 2.2 – moisture control.

Field of Application

BETEC[®] Seal is suitable for:

- Concrete waterproofing according to EN 1504-2 – principle 2.2 moisture control.
- Waterproofing of concrete and masonry, internal as well as external, below and above the ground water table, with or without positive or negative water pressure.
- Waterproofing of concrete and masonry in horizontal and vertical applications, such as: water reservoirs, tunnels, basements, etc.

Product Properties

Technical Data/Properties(*)

		BETEC® Seal
Properties	Unit	Value*
Grain size	[mm]	0-0.5
Application thickness / layer	[mm]	1
Maximum water quantity	[l / 25 kg]	6.5
Open time	[min]	≈ 45
Application temperature	[°C]	+5 to +35
Consumption(**) - First layer - Second layer	[kg/m²]	≈ 1.5 ≈ 1.5
Recoat time(***)	[hours]	>12
Fresh mortar density	[kg/dm³]	≈ 2.0
Adhesion to concrete	[MPa]	>2.0
Capillary absorption and water permeability	[kg/(m² · h ^{0,5})]	< 0.1
Water vapor permeability - Diffusion equivalent air layer thickness Sd	[m]	0.5
Shelf life	12 Months Stored under cover, clear of the ground, protected from all sources of moisture and frost.	
Packaging	Bags of 25 kg with plastic liner. 40 bags per pallet (1000 kg)	
Appearance	Grey powder	

(*)Typical values in production control. All tests were executed under a conditioned temperature of 21 °C and 65% RH.

(**) Consumption needs to be estimated by the designer, since it depends on the surface roughness and porosity.

(***) Recoating time depends on ambient conditions and should be applied when the first layer is sufficiently cured.

Application

1. Preparation of Substrate

- Substrate preparation has to be according EN 1504-10 part 7.
- The substrate has to be free from dirt, grease, laitance, loose concrete, loose particles or layers which could adversely affect adhesion.
- Remove all damaged concrete and prepare substrate by sand or grid blasting, high pressure water jetting, or other methods until base concrete is exposed, offering sufficient roughness (bond) and open pores.
- The substrate must be pre-wetted with clean water until saturated. The substrate should be damp, but without free standing water.
- The substrate must be frost-free and have a cohesion of minimum 1.5 N/mm².
- Exposed or corroded reinforcement steel needs to be treated with OMNITEK® CPC.
- Damaged areas need to be repaired with a suitable OMNITEK® or BETEC® cement based repair mortar.
- When ascending salts or efflorescence is identified on the substrate, a pre-treatment with AQUATEK® Sulfablock and/or AQUATEK® Saltstop needs to be done. An analysis of the type of salt is required for the selection of the pre-treatment.

2. Mixing

- The product has to be mixed using a suitable forced action mixer (400–600rpm). The mixing head must be completely immersed in the powder.
- Add 4/5 of the required quantity of water into the mixer and mix for 3 minutes. Let the mix rest for 5 minutes, then add the remaining quantity of water. The water content can be varied to obtain the desired consistency. Never use more than the maximum water quantity. Mix for an additional 1 minute until a lump-free, homogeneous mixture is obtained.
- The mixing time depends on the type of mixer. 4 minutes is the minimum.
- Once the mortar is ready mixed, apply immediately. Do not prepare more material than can be used within the open time of the material.

3. Application

- The material is applied in minimum 2 layers of 1 mm by using a brush or roller. Alternatively suitable spray equipment can be used.
- Apply the first layer on the dampened substrate in a horizontal stroke and allow curing for minimum 6 hours depending on ambient temperature.
- Predamp the initial layer and apply the second layer in a vertical stroke.
- Spray applications require brushing of the first layer to properly fill voids and achieve uniformity.
- Do not apply the material if the ambient temperature is below 5 °C or expected to fall below 5 °C within 24 hours.

4. Curing

- After treatment has to be according EN 13670 in combination with DIN EN 1045-3.
- In warm or windy conditions protect the applied material from dehydration by mist-spraying with clean water or protective tarpaulins until the initial set has taken place.
- In cold conditions cover with insulated tarpaulin, polystyrene or other insulating material. Protect surfaces against frost and rain until final set has taken place.
- In cold, humid or unventilated areas it can be necessary to allow for a longer curing period, or to introduce forced air movement to avoid condensation. Never use dehumidifiers during the curing period or within 28 days after application.

5. Cleaning and maintenance

- Mixing and application equipment should be cleaned immediately with clean water. Hardened material needs to be removed mechanically.

6. Special remarks

- Gypsum based plasters or water vapour impermeable coatings cannot be applied on BETEC® Seal when constant negative hydrostatic pressure is present.
- Negative water pressure must be removed during application to obtain a good adhesion of the material.
- As result of limited wear-resistance BETEC® Seal allows restricted pedestrian traffic on horizontal surfaces. In case of refilling soil, the surface needs to be suitably protected against mechanical damage.

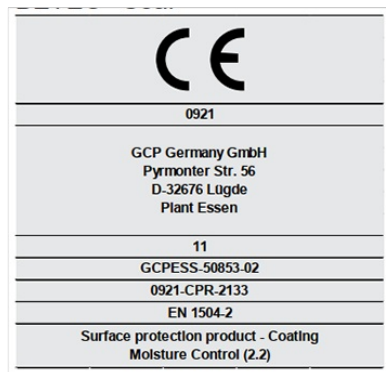
- Condensation may occur after application of BETEC® Seal in poorly ventilated and damp areas. Increasing the ventilation and/or plastering with a lightweight cement plaster can alleviate this.
- Cementitious materials can lead to incompatibilities under certain conditions in combination with non-ferrous metals (such as aluminium, copper, zinc).
- Low temperatures delay the setting of the material. High temperatures accelerate the curing and decrease the open time of the material.
- If BETEC® Seal is used in potable water tanks or fish tanks, the surface should be repeatedly washed with clean water before use.
- BETEC® Seal is not suitable for prolonged contact with hydrocarbons such as petrol, fuel oil, etc.

Health & Safety

BETEC® Seal is a product based on cement and can therefore cause burns to skin and eyes, which should be protected during use. Wear gloves and protective eye shields. Wearing a dust mask is advised. Treat splashes to eyes and skin immediately with clean water. Consult a doctor when irritation continues. If accidentally ingested, drink water and consult a doctor. Users must comply with all risk and safety phrases. MSDS's can be obtained from GCP Applied Technologies or from our website. GISCODE ZP1.

CE certificate

BETEC® Seal



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GCP Germany GmbH Pyrmonter Str.56 D-32676 Lügde Germany Plant Essen
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BS EN 1504-2:2004
Surface protection products – Coating Moisture control (2.2)

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